

Draft

NOISE ELEMENT
of the
GENERAL PLAN

Prepared for the
Trinity County Planning Commission
by
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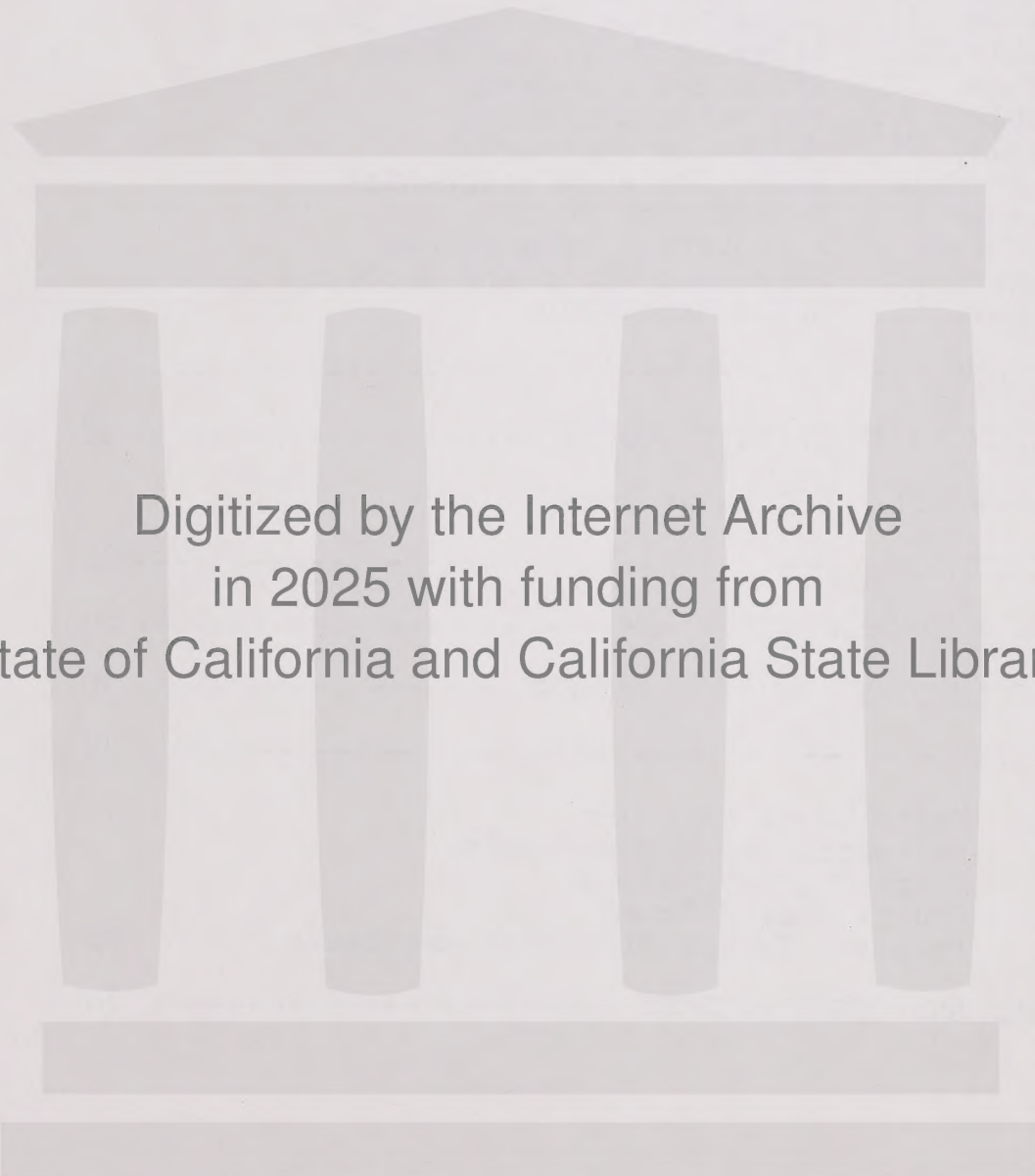
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PURPOSE

This Noise Element of the Trinity County General Plan is prepared in accordance with Section 65302(g) of the Government Code of the State of California, which requires:

A noise element in quantitative, numerical terms, showing contours of present and projected noise levels associated with all existing and proposed major transportation elements. These include but are not limited to the following:

- (1) Highways and freeways
- (2) Ground rapid transit systems
- (3) Ground facilities associated with all airports operating under a permit from the State Department of Aeronautics.

These noise contours may be expressed in any standard accoustical scale which includes both the magnitude of noise and frequency of its occurrence.

Noise contours shall be shown in minimum increments of five decibels and shall be continued down to 65 db(A). For regions involving hospitals, rest homes, long-term medical or mental care, or outdoor recreational areas, the contours shall be continued down to 45 db(A).

Conclusions regarding appropriate site or route selection alternatives or noise impact upon compatible land uses shall be included in the general plan.

The state, local, or private agency responsible for the constructions or maintenance of such transportation facilities shall provide to the local agency producing the general plan, a statement of the present and projected noise levels of the facility, and any information that was used in the development of such levels.

Noise is not generally considered a serious problem in Trinity County, although there are areas in Weaverville and Hayfork that experience annoying noise levels. It is hoped that new Federal and State regulations and County policies established in this Element will keep future noise at acceptable levels.

BACKGROUND INFORMATION

Noise is defined as "unwanted sound". Naturally, what is "noise" to some is "sound" to others. In urban areas, noise levels have increased to the point where "noise pollution" is a major nuisance and health hazard.

Sound pressure level, in units of decibels (dB), is the scale used to measure sound magnitude. The scale is logarithmic, so that an increase of 10 dB in the sound pressure level corresponds to a 10-fold increase in sound energy, and because of the way the human ear works, a 10 dB increase corresponds to a doubling in perceived loudness. Table I shows the relationship between sound pressure level, perceived loudness, and sound energy. Table II shows the sound pressure levels of various familiar sources.

Note that since the scale is logarithmic, decibel ratings of separate sources cannot be added arithmetically, that is, two motorcycles each producing 80 dB do not together create 160 dBA of sound; two sources together can never have a sound pressure level more than 3 dB greater than the loudest source alone, so the two 80 dB motorcycles would together create 83 dB of noise. And because of the way the ear works, it would take ten of those motorcycles, (a ten-fold increase in sound energy) before the perceived loudness of the sound would double. The relationship between sound pressure level and perceived loudness is shown in Figure 1.

A complicating factor is the way the ear responds to sound frequency (pitch) -- higher frequencies sound louder than lower frequencies. This is taken care of in noise measurement by weighting some frequencies more than others, as shown in Figure 2. When this has been done, sound pressure level is expressed in units of dBA.

Attenuation is the decrease in sound magnitude with increasing distance from the source. If there are no reflecting or absorbing surfaces along the sound path, sound pressure level decreases 6 dB with each doubling of distance from a small localized source, and decreases 4 dB with each doubling of distance from a "line source", such as a straight highway with an evenly spaced row of cars.¹ Such attenuation is shown in Figure 3. Attenuation is slower for a line source, since in that case there are actually several sources spaced at varying distances from the receiver. Figure 3 shows that decrease in loudness is very rapid for about the first 100 feet, then leveling off so that a very large distance is required to achieve a small loudness reduction.

Of course, attenuation is increased by barriers such as walls, fences, earth mounds, etc. As can be seen in the drawing on the following page, barriers must be impervious to the movement of air to be effective attenuators; therefore a solid fence or wall is required. Also, it is apparent from the drawing on the right that barrier effectiveness decreases with distance from the barrier because of the ability of sound waves to "bend" around obstructions; therefore, barriers should be close to the source or close to the receiver, rather than mid-way between.⁵

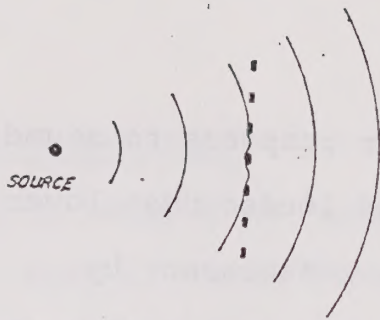


FIG. 2.6. Sound wave passing through a picket fence. This is a plan view; cross sections of the pickets are shown.

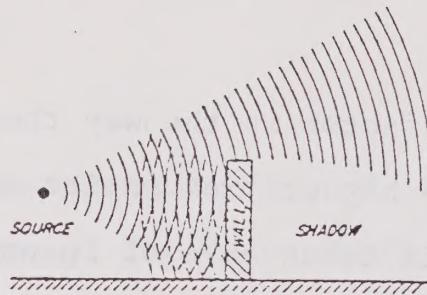


FIG. 2.7. Reflection of sound of short wavelength by a wall, and the resulting shadow.

Noise levels inside homes are, of course, significantly lower than exterior noise levels, as shown in Table III.

Vegetation is not normally an effective sound barrier, as it takes about one hundred feet of "jungle" to have a perceptible effect on noise, and even then the effect is almost negligible.¹ However, vegetation can have an important psychological effect as in the case where noise complaints from residents bordering a freeway ceased when a row of foliage was planted along the route. Apparently the adage, "out of sight, out of mind" is applicable.

Effects of noise include ear damage and permanent hearing impairment; temporary hearing loss; interference with communication, sleep, and the performance of complicated tasks; and annoyance due mainly to activity interference.² Though there's no convincing evidence that noise exposure can increase susceptibility to disease², it can cause headaches, anxiety, anger, insomnia, and fatigue, and has been blamed for homicides and suicides.³

Exposure to noise of sufficient magnitude causes temporary hearing loss, known as a "threshold shift", so that instead of perceiving all sounds down to zero dBA (the threshold of hearing), the threshold is raised so that for certain frequencies only sounds

down to, say, 20 or 30 dBA in magnitude can be perceived. Usually the ear is able to recover its sensitivity after a period of time. Threshold shift and recovery are shown in Figure 4.²

Exposure to average levels of greater than 70 dBA over a period of many years results in a "permanent threshold shift", meaning partial loss of hearing.⁴

Individual annoyance due to noise is dependent on a number of factors, including characteristics of the sound (magnitude, pitch, duration, consistency), the presence of masking noises (such as air conditioning), the listener's attitude toward the source and its operator (Is it good for me? Is he concerned for my welfare?), the listener's activity, the level of background noise, and any fear the listener may have of the source (such as fear that a low-flying airplane may crash). It is known that an indoor sound pressure level below approximately 45 dBA is necessary for 100 per cent intelligibility of speech, and less than a 60 dBA level is necessary in outdoor areas. A level below 32 dBA is necessary to prevent sleep interference.⁴

The Environmental Protection Agency has identified average sound energy levels which are necessary to protect virtually all members of the public against hearing loss and speech communication interference, summarized in Table IV. These levels take only public health and welfare into account, and do not attempt to compromise public welfare with economic or technological feasibility.

The identified levels assume that hearing loss is a function of sound energy exposure, so that equal energy exposures would give an equal degree of security, a concept illustrated in Figure 5. Since the sound energy of levels less than 60 dBA are negligible when compared with levels greater than 70 dBA, higher sound levels can be safely tolerated for short periods if levels are low for the remainder of any day. So at levels of around 120 dBA, a total daily dosage of one second can be absorbed without risk of hearing loss if levels during the remainder of the day are less than 60 dBA.

Other government agencies have developed noise standards for activities in their area of concern, as shown in Tables V and VI and Figure 5.

In addition to its psychological and physiological effects, noise has economic impacts, including the cost of medical care, loss of efficiency, reduction of property values, and cost of abatement.

TABLE I.
Sound Scale Relationships 5,9,11

<u>Sound Pressure Level (dBA)</u>	<u>Relative Perceived Loudness</u>	<u>Relative Energy Level</u>
140	16448	10^{14}
130	8224	10^{13}
120	4112	10^{12}
110	2056	10^{11}
100	1028	10^{10}
90	512	10^9
80	256	10^8
70	128	10^7
60	64	10^6
50	32	10^5
40	16	10^4
30	8	$10^3=1000$
20	4	$10^2= 100$
10	2	$10^1= 10$
0	1	$10^0= 1$

TABLE II.

Common Noise Levels 3,9,10

<u>Sound Pressure Level</u>	<u>Source</u>	<u>Effects</u>
140	sonic boom	
130	jet plane at 100 feet	
120	amplified rock music	threshold of pain
110	thunder	
100	power mower	physical discomfort
90	heavy truck at 20 to 50 feet	recommend maximum exposure - 8 hr/day
80	washing machine alarm clock garbage disposal heavy traffic	continued daily exposure causes hearing loss
70	quiet car interior at 60 mph vacuum cleaners	
60	normal conversation electric typewriter	
50	quiet urban street	
40	refrigerator	
30	library	
20	whispering	
10	leaves rustling	
0	breathing	threshold of hearing

TABLE III.⁴

SOUND LEVEL REDUCTION DUE TO HOUSES* IN WARM AND COLD CLIMATES, WITH WINDOWS OPEN AND CLOSED

	<u>Windows Open</u>	<u>Windows Closed</u>
Warm climate	12 dB	24 dB
Cold climate	17 dB	27 dB
Approximate national average	15 dB	25 dB

*(Attenuation of outdoor noise by exterior shell of the house).

TABLE IV.⁴

SUMMARY OF NOISE LEVELS IDENTIFIED AS REQUISITE TO PROTECT PUBLIC HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY

EFFECT	LEVEL	AREA
Hearing Loss	$L_{eq}(24)$ 70 dB	All areas
Outdoor activity interference and annoyance	L_{dn} 55 dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24)$ 55 dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	L_{dn} 45 dB	Indoor residential areas
	$L_{eq}(24)$ 45 dB	Other indoor areas with human activities such as schools, etc.

TABLE V

Federal Highway Administration
Exterior Noise Standards.¹²

<u>Land Use</u>	<u>L₁₀ Values*</u>
open space, quiet parks	60 dBA
public meeting rooms, churches, schools, libraries, hospitals	70 dBA
residences, hotels, motels	70 dBA
recreation areas, playgrounds, parks, sports areas	70 dBA
other developed areas	75 dBA
undeveloped land	no limit

* L₁₀ values are those noise levels which are permitted to be exceeded 10 per cent of the time, that is, 2.4 hours per 24 hours.

TABLE VI.

HUD Noise Standards for Federally-Sponsored Housing.¹⁰

External Noise Exposure Standards (per day)

Unacceptable:

80 dBA exceeded more than 1 hour
or 75 dBA exceeded more than 8 hours

Normally Unacceptable:

65 dBA exceeded more than 8 hours
or loud, repetitive sounds on site

Normally Acceptable:

65 dBA exceeded less than 8 hours

Acceptable:

45 dBA exceeded less than $\frac{1}{2}$ hour

Sleeping Quarters Exposure Standards (per day)

Acceptable:

55 dBA exceeded less than 1 hour
and 45 dBA exceeded less than 8 hours
and 45 dBA exceeded less than $\frac{1}{2}$ hour
between 11 pm and 7 am

Figure 1.

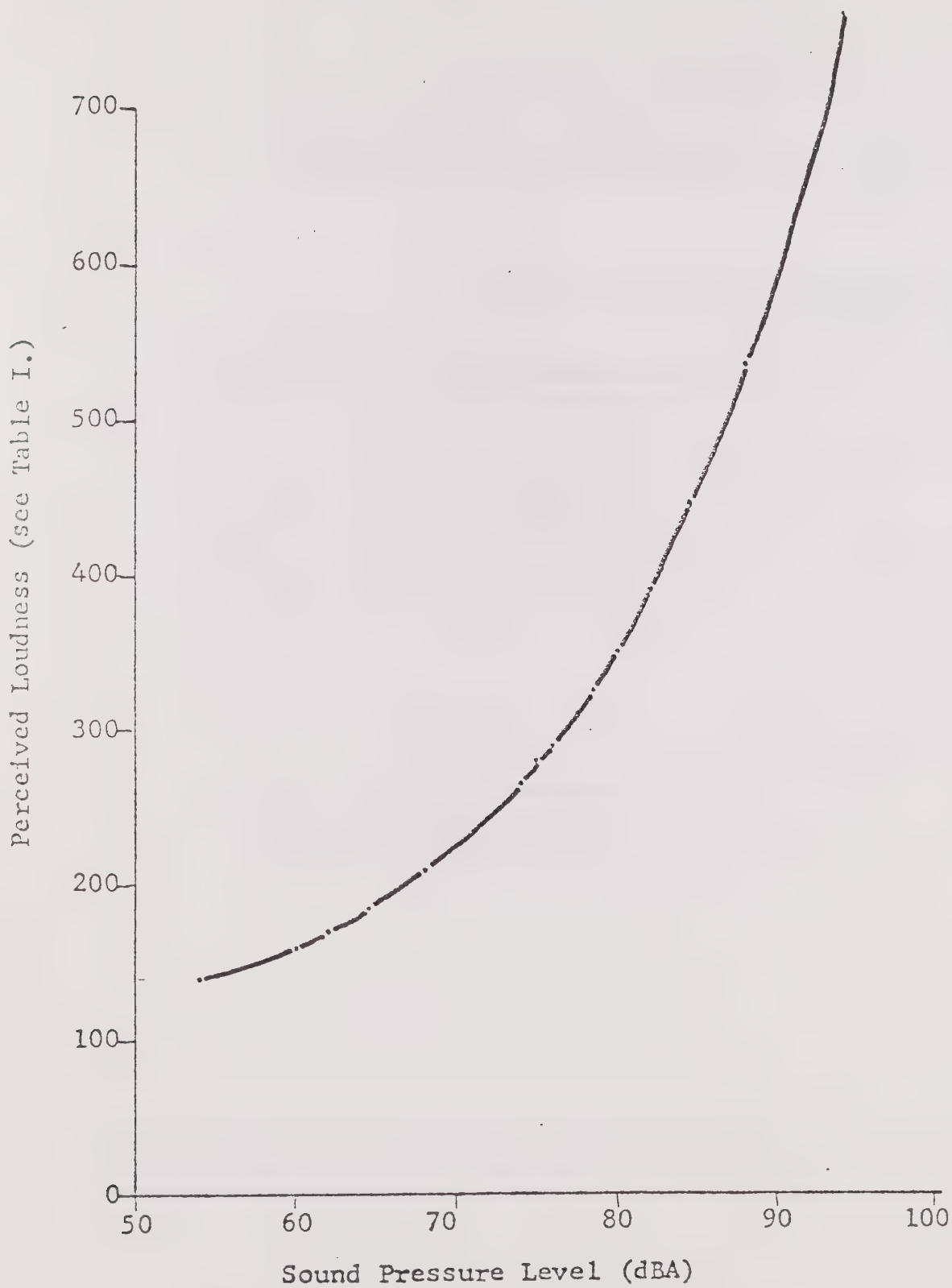
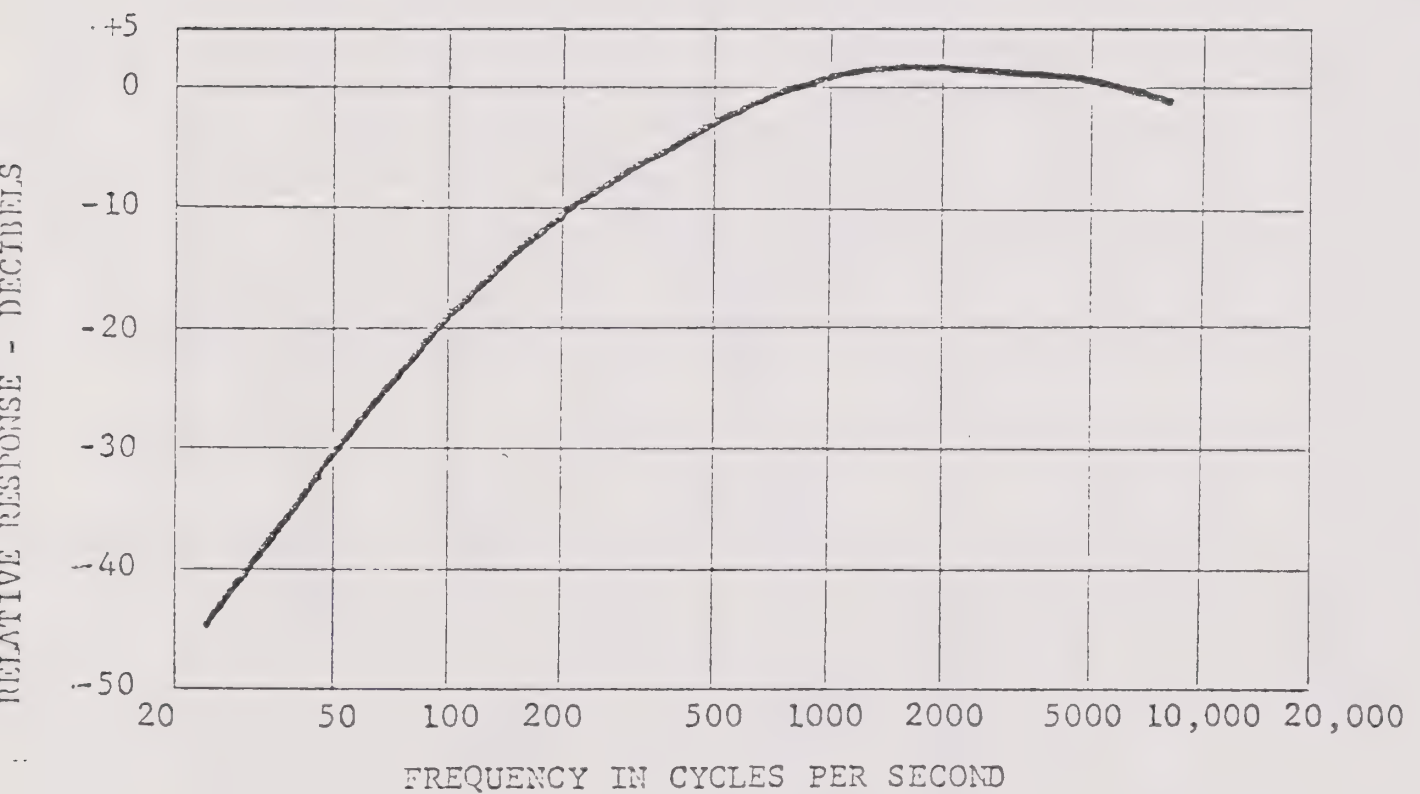


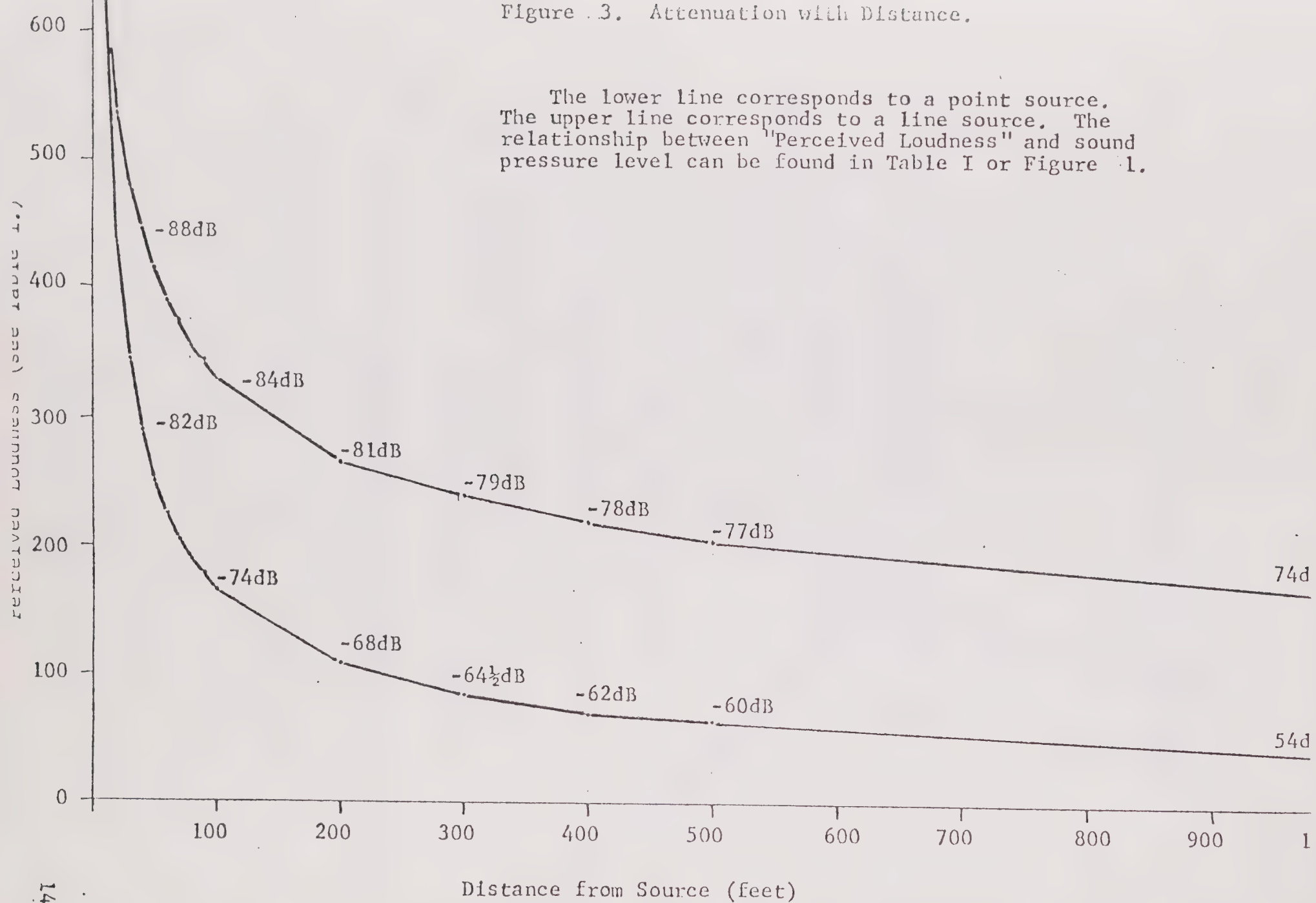
Figure 2. The A-Weighting Scale.¹¹



Note that lower frequencies are suppressed, corresponding closely to the way the ear perceives loudness.

Figure 3. Attenuation with Distance.

The lower line corresponds to a point source. The upper line corresponds to a line source. The relationship between "Perceived Loudness" and sound pressure level can be found in Table I or Figure 1.



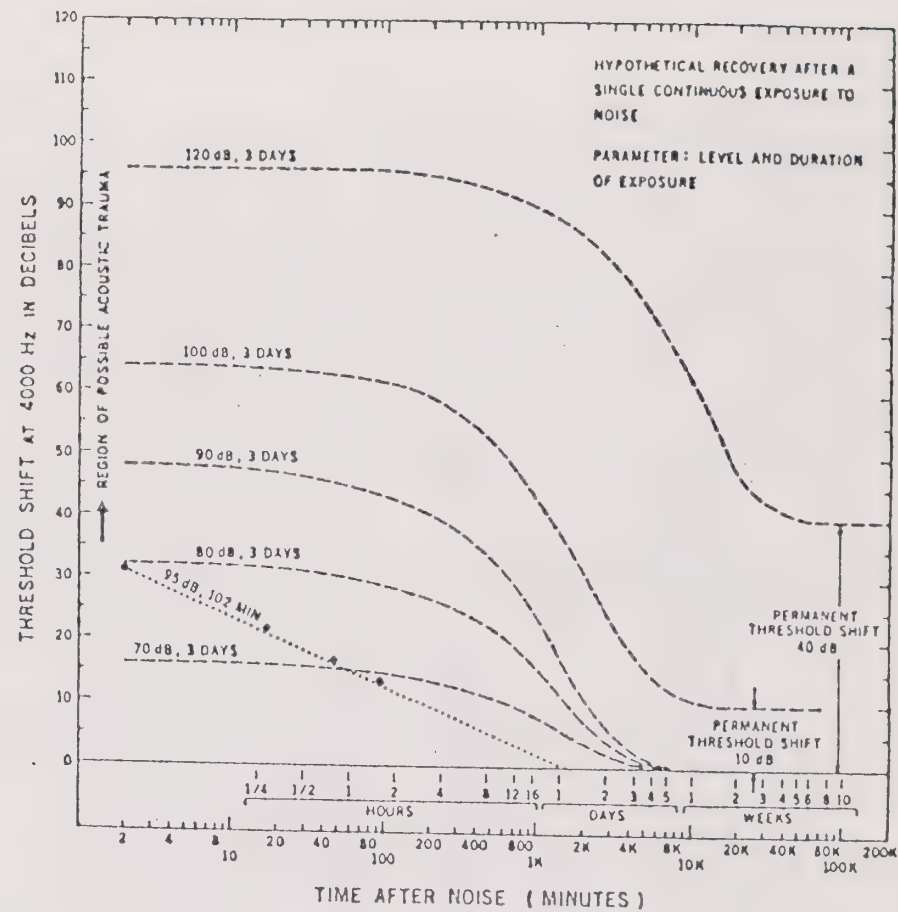
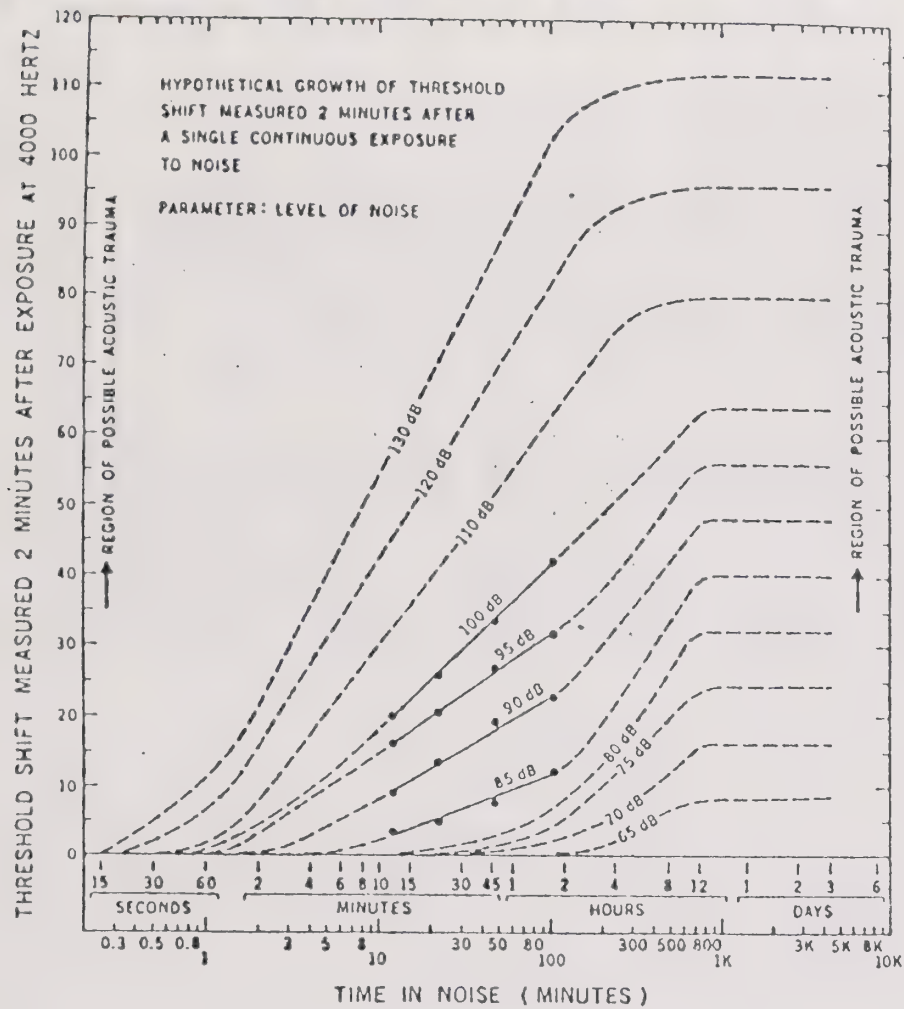
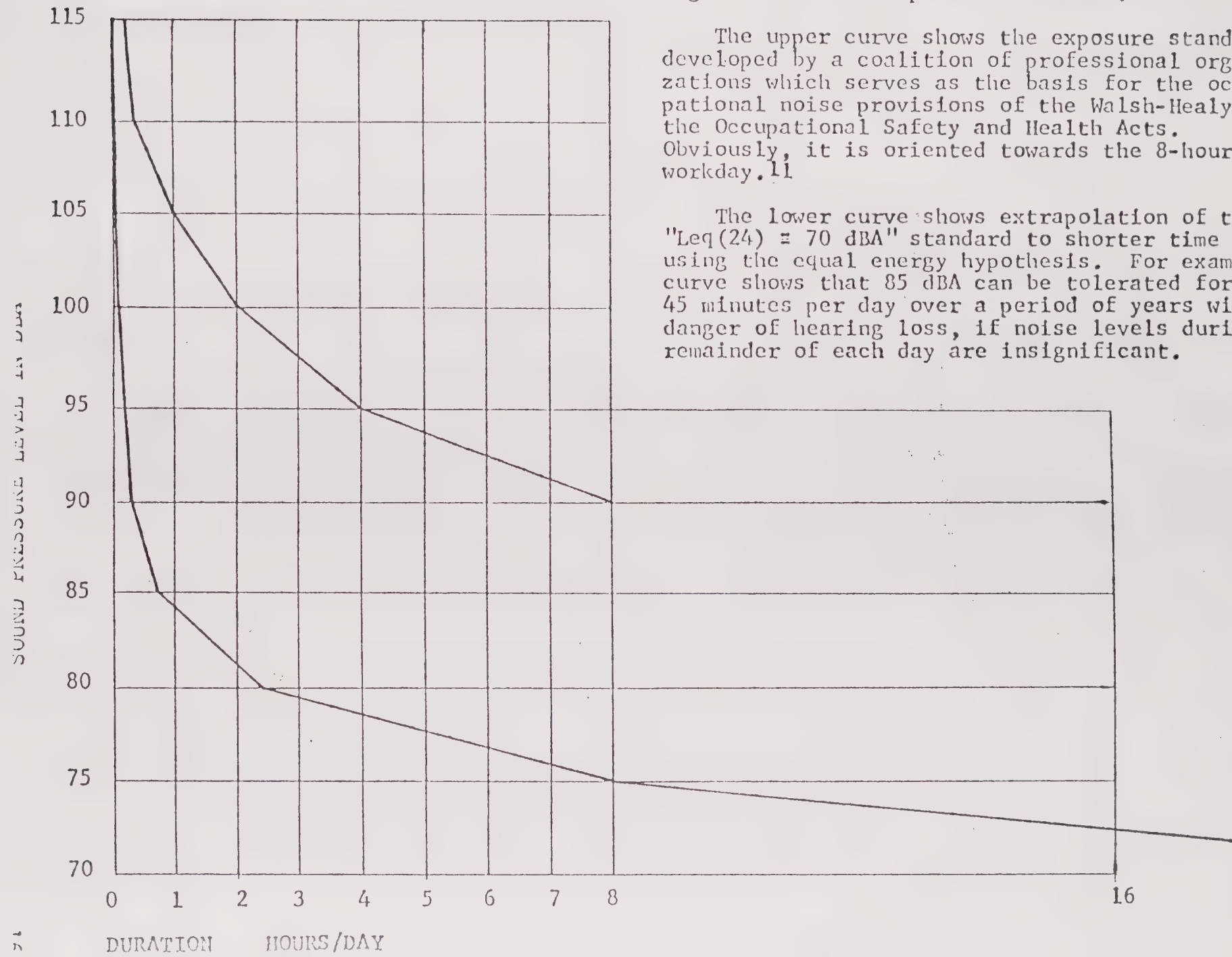


Figure 5. Noise Exposure Standards.

The upper curve shows the exposure standard developed by a coalition of professional organizations which serves as the basis for the occupational noise provisions of the Walsh-Healy and the Occupational Safety and Health Acts. Obviously, it is oriented towards the 8-hour workday.¹¹

The lower curve shows extrapolation of the EPA's "Leq(24) = 70 dBA" standard to shorter time spans, using the equal energy hypothesis. For example, the curve shows that 85 dBA can be tolerated for about 45 minutes per day over a period of years without danger of hearing loss, if noise levels during the remainder of each day are insignificant.



DEFINITIONS

L₁₀ value -- the sound pressure level which is exceeded ten percent of the time, that is, the level exceeded 2.4 hours out of every 24 hours.

L_{eq}(8) value -- Average sound energy over an eight-hour period.

L_{eq} or L_{eq}(24) value -- Sound energy averaged over the 24-hour day.

L_{dn} value -- similar to L_{eq}(24), except that sound levels between 10 pm and 7 am receive a 10-dBA weighting.

CNEL -- "Community Noise Equivalent Level", similar to the L_{dn} value, except that a 3 dB weighting is applied to evening hours.

L₁₀ values can be roughly converted to L_{eq} values by subtracting 2 dB from the L₁₀ value.⁴ L₁₀ values may be approximately converted to CNEL by adding 6 dB to the L₁₀ value.¹⁶

NOISE SOURCES IN TRINITY COUNTY

Sources of noise in Trinity County include the following:

- highway traffic, especially logging trucks.
- sawmills.
- airports (light planes).
- other sources, classifiable as miscellaneous residential, commercial, and industrial sources.

Highway noise along State highways in Trinity County was measured during August 1974 by the Department of Transportation. Results are shown in Table VII. Measured levels, shown in column one, were converted to so-called "peak" levels (actually not the peak level experienced during the year, but rather a level considered most representative of high noise levels occurring) and then projected to 1995 using volume increase predictions. Contours of equal L_{10} values for the Weaverville area were plotted on an airphoto base, as contained in Appendix I.

Converting the L_{10} values to L_{eq} values, we see that there are apparently no areas in the County where a person could be expected to suffer hearing loss due to highway noise, now or in 1995. No outdoor areas are within the $L_{10} = 70$ dBA contours which would be used continuously by any individuals over a long period, and the structures which are within the contours would attenuate the estimated exterior noise by 10 to 25 dBA.

Considerable communication interference must result, however, from the high noise levels in Weaverville and Hayfork. Although 55 dBA contours are not shown on the DOT maps, it can be calculated that 55 dBA contours would extend 150 to 360 feet from the edge of Highways 299 and 3 in Weaverville, and about the same distance from Highway 3 in central Hayfork. This takes in a very large area, including the Weaverville and Hayfork Elementary Schools, some residential areas, Hayfork Community Park, and every business along the two highways. By 1995, the 55 dBA line will be back to 315 to 585 feet from the edges of the highways, almost doubling the area within the contour.

The situation along County roads is much less serious, due to lower volumes, fewer trucks, and lower population densities. Volume figures for State and County routes are given in Appendices III and IV.

Sawmills are found in Weaverville, Hayfork (2), Wildwood, Hyampom, Mad River, and Burnt Ranch. Mill noise at the property line was found to usually be below 60 dBA¹⁵, though this varied with time, mill, and mill boundary location. Due to this moderate noise level, and also to the few number of mills, their usually out-of-the-way location, and the large yard area surrounding actual mill noise sources, sawmills are not considered nearly as important as highways in the County's total noise situation. However, mills can be a localized problem, so there follows a discussion of the noise situation surrounding each mill.

(1) Weaverville. The Weaverville mill is owned by California Pacific Manufacturing and is operated 8 hours a day, five days a week. From Highway 299, mill noise is barely perceptible due to loud and continuous traffic noise. Away from the highway, however, mill noise is dominant. Noise levels at the property line were found to generally be around 60 dBA, although tractor noise went as high as 76 dBA. This mill is located in a developing area, and steps should be taken to prevent future noise problems. Mill expansion plans call for addition of a chipper, but the chipper and the existing planer will be enclosed, hopefully reducing noise levels below what they are at present.⁸

(2) Hayfork. Both Hayfork mills are owned by Sierra Pacific, and operate 16 to 18 hours a day, 5 or 6 days per week. Due to the unusually large yard areas surrounding mill buildings, noise levels at the property line were low for these mills, averaging between 40 and 50 dBA. Streams bordering both mills will serve as extra noise buffers if adjacent properties are developed. As with the Weaverville mill, however, the Hayfork mills are within developing areas, and care should be exercised in the design of nearby development.

(3) Burnt Ranch (operated by Carolina California Plywood). This mill is distant from all existing development except for the Burnt Ranch Elementary School, which borders the mill yard. The barker at the mill was very loud and created

sound levels of over 70 dBA at times at the edge of the school playground, though levels there were generally 51 to 60 dBA. At the wall of the school building facing the mill, levels were reduced to between 45 and 50 dBA (48 to 53 while the barker was operating), due to the considerable setback of the building. Levels at the other locations around the mill property generally were in the 50 to 60 dBA range.

(4) Hyampom (operated by Hyampom Valley Lumber Company). As at Burnt Ranch, the area surrounding the Hyampom mill is generally unpopulated. One side faces on the wide flood plain of the South Fork of the Trinity River. There was a wide range of noise levels, from 47 to 67 dBA, and tractor noises about 70 dBA.

(5) Wildwood. This mill is quite distant from any existing development, its only neighbor being a small farm across State Highway 36. The mill occupies a narrow valley and the steep surrounding land is undevelopable. Levels at the highway were found to be around 50 dBA.

(6) Mad River (operated by Louisiana Pacific). Again, the surrounding area is generally unpopulated. The mill faces the Mad River flood plain, and is otherwise bordered by a large pasture and a steep-sided hill. Noise measurement was all but impossible due to wind, but estimated levels were around 50 dBA.

In general, it was found that the loudest noises emitted from mills came from tractors, fork lifts, and logging trucks operating intermittantly near yard boundaries. Actual sawmill noise was largely attenuated by distance by the time it reached property borders. It was found that stacks of logs piled around mill yards were quite effective as noise attenuators, and it would be advantageous if managers consciously located these stacks to serve such a purpose.

Mill noise is presently regulated by State and Federal industrial health and safety regulations. These noise exposure requirements, though intended to protect employees, also benefit people living and working in areas adjacent to factories. The County also sets limits for mill noise emissions in the Zoning Ordinance.

Airports in the County are located at Weaverville, Trinity Center, Hayfork, Hyampom, ^{Hoagland - Odessa} and Ruth. Volumes at all airports are low, with Weaverville, for example, experiencing approximately ten flights per day during summer months and almost none from November through February. Only Trinity Center's volume exceeds Weaverville's, but approach zones there are largely located over Clair Engle Lake, thus reducing potential noise exposure.⁷ Due to the small number of flights, airport noise is not considered a problem in the County.

Measurements near the end of the Weaverville runway showed that the takeoff of four light planes produced maximum noise levels

of 76, 81, 85, and over 80 dBA at a distance of 175 feet.¹⁵ Calculations show that noise exposure from the takeoff of a single-engine plane is quite similar to the dose from the passage of a diesel truck/trailer.

Miscellaneous sources include industrial/commercial establishments such as service stations, auto repair garages, hardware stores, etc., and residential activities. Noise emissions are regulated by the County Zoning Ordinance (aimed at industrial sources). Residential noise resulting from barking dogs, children at play, loud music or TV programs, and the use of power tools such as lawn mowers can be annoying but generally must be tolerated. Extreme nuisances are covered by statutes which forbid "disturbance of the peace".

A railroad line runs for about twenty miles through the extreme southwestern corner of the County. Due to the very sparse population in that region, railroad operations are not considered a significant noise source in Trinity County.

TABLE VII.
FIELD DATA
Trinity County

Location	L ₁₀ Measured 1974 L ₁₀ Trucks/Hr	Estimated Peak 1974 L ₁₀ Trucks/Hr	Estimated Peak 1995 L ₁₀ Trucks/Hr
Site 299 Site CHP ft. (North 299)	69 dBA 27	67 dBA 18	71 dBA 38
in Road ft. (South 299)	65 dBA 18	65 dBA 18	68 dBA 38
St. Baptist Church ft. (North 299)	71 dBA 45	69 dBA 31	72 dBA 59
ington Street ft. (South 299)	70 dBA 21	70 dBA 73	72 dBA 37
nz Road ft. (South 299)	66 dBA 30	62 dBA 12	65 dBA 24
Site USFS Ranger Station ft. (North 299)	67 dBA 18	65 dBA 12	68 dBA 24
Trinity High School ft. (North 299)	66 dBA 18	64 dBA 12	67 dBA 24
tion City ft. (North 299)	64 dBA 6	64 dBA 6	65 dBA 9
Site 3 Elementary School ft. (East 3)	62 dBA 3	67 dBA 9	71 dBA 24
Rte. 3 and Washington St. ft. (East 3)	65 dBA 9	65 dBA 9	69 dBA 24
ity Center ft. (East 3)	68 dBA 10	65 dBA 5	71 dBA 18
ee Creek ft. (East 3)	61 dBA 90 (cars)	61 dBA 60 (cars)	4 dBA 260 (cars)
ork (Center) ft. (Southeast 3)	67 dBA 12	70 dBA 26	73 dBA 43
ork High School ft. (Southeast 3)	65 dBA 12	68 dBA 26	71 dBA 43

Distances are from the edge of traveled way.

Sampling time is usually 20 minutes.

NOISE CONTROL

Federal regulations require a gradual reduction in noise levels of new vehicles to a 70 dBA goal by 1988.¹² Also, the Department of Housing and Urban Development requires the considerations of noise in its funded programs, and discourages the construction of dwelling units on unacceptably noisy sites by the withholding of financial support.¹⁰

State law sets noise emission limits for vehicles, a statute being enforced by the California Highway Patrol.¹¹

Another State law, Section 1092 (e) of the Noise Insulation Regulation in Subchapter 1, Chapter 1, Title 25, California Administrative Code, deals with insulation of dwellings from exterior noise sources. It states that prior to construction of a new residential structure (other than detached single family dwellings) within a CNEL contour of 60 dB adjacent to State highways and County roads, there must be prepared an acoustical analysis. The analysis must show that the proposed building has been designed to limit intruding noise to an annual CNEL of 45 dB in any habitable room.¹⁶

And still another State law will limit noise emissions of powerboats to ____ dBA after 19__.¹⁷ This will hopefully reduce noise on Trinity Lake, although the method of enforcement may be a problem.

County noise control measures can be legally implemented through the Zoning Ordinance, zoning district location, Subdivision Ordinance and Building Code amendments. Also, the County can consider noise in the purchases which it makes, and can encourage noise abatement in various ways.

(1) Zoning district location: Perhaps the best way to reduce noise exposure is simply to separate noisy uses (such as highways and mills) from quiet uses (parks, hospitals, schools, offices, residences, and possibly commercial uses) by suitable distances through the proper location of zoning districts. Due to high noise levels often encountered on the job, it is essential that residential areas be separated from loud noise so as to allow the ear to recover, preventing permanent hearing loss.

Another use of zoning would be to locate residential and commercial uses so as to reduce the number of trips by automobile, either by intermixing residential and commercial districts, or by creating compact, centralized commercial districts instead of linear or "strip" zones. Both methods reduce the need for the auto, thus reducing not only noise, but also traffic and energy consumption.

Finally, lower density zoning can reduce the annoyance caused by residential sources, although it generally increases dependence on cars if applied over large areas without providing for neighborhood commercial centers.

(2) Zoning Ordinance requirements: Various changes in the Ordinance would serve to reduce noise exposure, including:

(a) reducing permitted noise emissions, (b) increasing setback and yard requirements along highways and adjacent to mills, (c) allow walls higher than the maximum six feet presently permitted in some districts, where the higher wall is necessary for noise abatement, and (d) require use permits for residential development within "x" feet of mills and highways, subject to special

noise attenuation measures.

(3) Building Code Ordinance: the Ordinance could be amended to require lower sound transmission ratings for walls and other construction techniques which reduce interior noise in noisy areas.

(4) Subdivision Ordinance: During the subdivision and lot split approval process, various stipulations could be required for developments adjacent to highways and mills including walls or fences, special yard or set-back requirements, special site plan and open space requirements, density reduction, and special construction reduce interior noise.

(5) Traffic routing: Logging truck traffic should be encouraged to use roads which by-pass densely populated areas. Thru-traffic should be routed so as to avoid residential areas. Bike lanes should be developed to encourage healthy and quiet transportation.

(5.1) Restrictions on trailbike use: Trailbikes are an annoying source of noise in many recreation areas, and are especially incompatible with wilderness-type recreation such as backpacking and hiking. The County, in cooperation with landowners, could restrict trailbikes to designated trails or areas, or, using an opposite approach, ban their use within certain zones, as is now done in Federal Wilderness Areas.

(6) Other County measures: A factor in the choice of new County building sites should be the noise levels at proposed sites. When possible, County buildings should be located so as to reduce dependence on the automobile for transportation from home to work and for job-related trips.

(7) It is hoped that Trinity County's industries will recognize their responsibility to abate noise to the fullest extent possible. In the case of sawmills, measures could include more effective mufflers for internal combustion engine-powered equipment, housing of planers, chippers, etc., and the utilization of log stacks and earth embankments near property lines as noise barriers.

(8) There's a lot that individuals can do to reduce their own and other's exposure to noise, as explained in "A People's Guide to Noise Abatement", which follows.

SPECIFIC RECOMMENDATIONS

1. In the future, noise from sawmills and highways should be considered in the location of residential zoning districts and in the siting of schools, parks, offices, hospitals, and other noise-sensitive uses.
2. Where feasible, alternate routes around densely populated areas should be provided for large trucks, thus reducing not only noise exposure but also traffic problems. An example was the use of Brown's Ranch Road by logging traffic traveling to and from the Trinco Mill -- since the bridge across Weaver Creek was declared unsafe, the trucks have been forced to travel through downtown Weaverville.
- 3.. Quiet forms of transportation such as walking and bicycling should be encouraged.
4. The Noise Insulation Regulation in the State Administrative Code should be enforced. A proposed amendment to the Zoning Ordinance is contained in Appendix V. The "H(N)" Overlay would encompass all areas in the County within L₁₀ contours of 55 dBA (approximately equal to a CNEL of 60 dBA).
5. It must be realized that although noise is not a health problem in Trinity County, it is a major annoyance in some areas and should be abated, when feasible, to the benefit of everyone.

A PEOPLE'S GUIDE TO NOISE ABATEMENT

A large part of the noise present in a rural environment like Trinity County's could be eliminated if people would just realize that noise is harmful and would try to eliminate unnecessary noise. So this section suggests some things people can do. The choices are there for those who choose to choose them.

1. Passenger cars emit noise at levels of 75 to 85 dBA (measured fifty feet away) under high acceleration. Motor-cycle acceleration can produce up to 100 dBA. More moderate acceleration not only saves gas, but reduces noise and annoyance levels considerably.
2. Better yet, eliminate the 70 dBA (at fifty feet) produced by your car at steady speed altogether by walking or riding a bike for trips shorter than, say, two miles round trip. It saves gas and money, and is healthier and enjoyable.
3. Be kind to your neighbors and save noisy activities for daytime hours. After dark, noises become much more annoying since this is when people expect quiet.
4. Buy quiet appliances. There is a tendency among consumers to equate noise with power or efficiency, but the relationship does not hold, since better quality products have usually been engineered to reduce noise output. With many appliances producing over 80 dBA, the home can be a very noisy place.

5. Those are the easy things. More basic changes are harder to make but bring bigger decibel cuts: things like using a push-mower instead of a power mower, backpacking instead of riding a trail bike, paddling a canoe rather than powerboating, wielding an axe instead of chain-saw, etc. Work can be recreation, and recreation doesn't have to go fast.

APPENDICES

Appendices I to IV have been omitted in this draft to save on copying costs. Noise contour maps and traffic volume tables are on file in the Planning Commission office and are accessible to the public. All appendices will be included in the final element.

APPENDIX V.

Proposed Zoning Ordinance Amendment

SECTION _____ -- CRITICAL NOISE AREA OF H(N) OVERLAY

The purpose of this Overlay is to indicate areas where special noise studies are required pursuant to Section 1092(e) of the Noise Insulation Regulation in Subchapter 1, Chapter 1 Title 25, California Administrative Code.

All provisions of the underlying District shall apply with the following addition:

1. An accoustical analysis shall be submitted to and approved by the Building Inspector prior to the construction of any residential structure other than new detached single-family dwellings ("detached single-family dwellings" being defined as any single-family dwelling which is separated from adjacent property lines by at least three feet or is separated from buildings by at least six feet). The accoustical analysis shall show that the structure has been designed to limit noise attributable to exterior sources to an annual Community Noise Equivalent Level (CNEL) of a maximum of 45 dB in any habitable room.

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